Origin of the Electric Guitar

by Eric Cale, Director of the Wichita-Sedgwick County Historical Museum, Presented October 13, 2018 at The Electric Guitar in American Culture conference, Texas Tech University, Lubbock, Texas

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Book design by Zach Rathbun

The Conference - The Electric Guitar in American Culture

The Vernacular Music Center at the School of Music at Texas Tech University organized The Electric Guitar in American Culture conference held on October 12 - 14, 2018 in Lubbock, Texas. The conference featured academic sessions of research papers presented by scholars on the many facets of the electric guitar, including popular, vernacular and cultivated music, technology, material culture, and social geography; commerce, design and marketing; semiotics, organology, reception and performance studies; and music and gender.

Website:
https://sites.google.com/view/electricguitaramericanculture/home

Introduction

The history of the electric guitar has, until recently, been understudied. During the past decade the origin of the electrically amplified guitar has come to light through scholarly research by historians committed to challenging colorful legend with fact. This presentation examines the origin story of the electric guitar challenging much of what has popularly been put forward as the instrument's history and erroneously remains "viral" through-out media.

Better music through louder instruments: it has been a goal throughout human history. The electrical amplification of volume for musical instruments would emerge with 20th century advances in applied electronics. Here I present a time line leading us to the advent of the most popular instrument of our time – the electric guitar.

It is serendipitous that I was born in the city where the electric guitar made its much publicized public debut in October of 1932. My fortune was accentuated by the opportunity to one day identify Gage Brewer's Ro-Pat-In electric Spanish guitar, now widely considered the first electric guitar, after it entered the establishment where I was employed: a music store which specialized in stringed instruments. My employer, Clifton "Clif" Major, had purchased the guitar as a curiosity rather than an instrument to refurbish and resell. It was fortuitous that Richard R. Smith had recently published ***The Complete History of Rickenbacker Electric Guitars***, a book which provided me with the knowledge I used to identify the "Brewer Guitar" as an early example of the company's efforts to create the electrically amplified standard Spanish Guitar. Thus began an odyssey where I encountered a wonderful range of notables from Bob Brozman to Joe Walsh.

Initially it was Lynn Wheelwright who flew into Wichita in 2001 to examine the "Brewer Guitar" first hand. Later, through Wheelwright I was privileged to meet Arian Sheets, Curator of Stringed Instruments at the National Music Museum. ***Campaign for Volts*** was an exhibit we created together for the Wichita-Sedgwick County Historical Museum in 2008. This exhibit attracted the attention of filmmaker Mark Moorman who then created an award-winning short film ***Electric Revolution***. Soon we gained collegial associations with Dr. Matthew Hill, an Organologist in Edinburgh, and Musicologist Deke Dickerson of Hollywood, and finally our mutual guitar historian hero Richard R. Smith of Fullerton, California. Together we held a symposium in 2012 celebrating the 80th anniversary of the electric guitar's debut, centered on a new exhibition, ***Eighty Years of the Amplified Guitar*** (eguitar@80). This was followed by a subsequent exhibit ***The Electric Guitar – Wichita's Instrument*** and symposium held at the Museum in 2016 which introduced us to scholars including Allen DiPerna, Dr. Wayne Goins, Craig R. McKinney, Emanuele Marconi, HD Newquist, Ian S. Port, and Dr. John Troutman. It has been my privilege to become acquainted and work with them, as well as with the professional staff, Board of Trustees and various funders at the Wichita-Sedgwick County Historical Museum who have made these exhibits and programs possible - bringing this history to light. Finally, it was gratifying to have the following talk accepted for presentation at the Electric Guitar in American Culture conference at Texas Tech University.

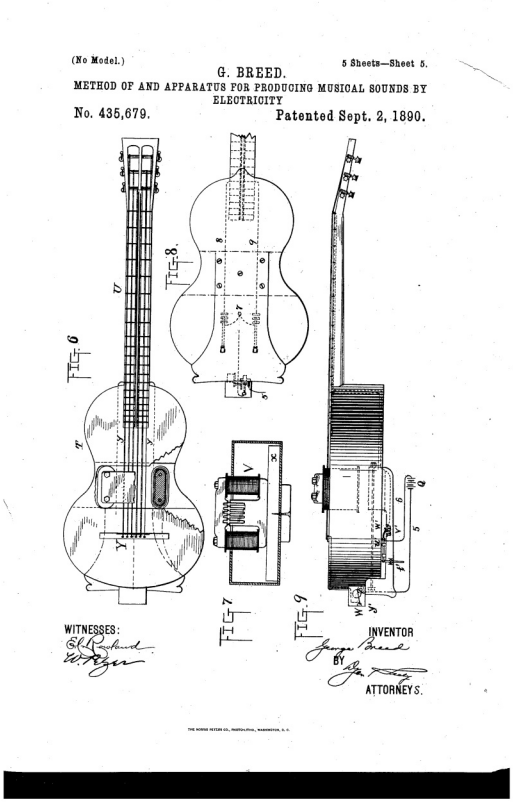
Eric Cale, a fifth generation Wichitan, has served as the Executive Director of the Wichita-Sedgwick County Historical Museum since 2007. There he has curated five exhibits and two symposiums exploring the history of the electric guitar. He has also contributed to publications including the Oxford Encyclopedia of Music.

Benjamin Franklin Drawing Electricity from the Sky painting by Benjamin West, circa 1816, Philadelphia Museum of Art, Gift of Mr. and Mrs. Wharton Sinkler, 1958, 1958-132-1

We begin with Benjamin Franklin who, as we all know, “discovered electricity” while flying a kite in a thunder storm. This story is greatly simplified; the modern scientific study of electricity had been underway for a century by then. Franklin was simply making advances by correlating static electricity in the atmosphere with other electrical charges. Jump ahead a century, to the invention of the electric light, the telephone and the phonograph; all of which occurred in the same brief period and were completely new advances. The initial application of electric light was fairly straight forward (it replaced firelight), but uses for the telephone and phonograph were not so apparent.

It was initially thought that the phonograph would be used for recording audio letters that could be sent by mail. The telephone, some thought, would be best used as a public address system that could also broadcast music. Obviously it takes time to understand, then bend technology into what we need it to be.

Two creative minds applied electricity to musical instruments in this period, however, neither with the goal of amplifying volume the goal was tone-generation. The first, patented in 1890 by George Breed, was a guitar that emitted sound generated mechanically and powered by electricity. The second, patented in 1897 by Thaddeus Cahill, was called the Telharmonium or Dynamophone. It was a large and complicated keyboard instrument designed to transmit music over telephone lines. Breed's guitar remained only a concept while the Telharmonium was realized after substantial investment, only to be abandoned after a decade of occasional use. More might have been possible for these instruments had vacuum tubes, still years away, been available to amplify their signals. About a quarter century later, a tone generating instrument now known as the Theremin would become the first electronic musical instrument to be put into production.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G. BREED.

METHOD OF AND APPARATUS FOR PRODUCING MUSICAL SOUNDS BY ELECTRICITY

No. 435,679. Patented Sept. 2, 1890.

FIG. 6

FIG. 8.

FIG. 7

FIG. 9

WITNESSES:

INVENTOR

BY

ATTORNEYS.

Breed Guitar Patent, 1890

Theremin Concert Advertisement, 1928

The Telharmonium, 1897

The culture's enthusiasm for the electrical technology led to the publication of magazines such as *Modern Electrics* in 1908 and *The Electrical Experimenter* in 1913; both marketed to an emerging middle class who were experiencing a rising standard of living including self-directed leisure time. Many directed their leisure time to the "electrical hobby," often focusing on wireless (radio) technology. These garage, basement and shack dwelling hobbyists occasionally aspired to become inventors, working to improve what existed or apply electricity to entirely new concepts.

By 1920, the American public was going to the movies regularly. Films were silent; just "moving pictures" with captions to read and sometimes augmented by live music – typically a piano player. By the next year, radio stations began to broadcast and Americans began buying radios. In 1921 Warren Harding, the 29th President, launched his presidency by being the first to ride to his inauguration in an automobile, then be the first to address crowds using a microphone amplified through a specially designed Western Electric public address system. It is at this time, perhaps, that the amplification of musical instruments emerged as a viable possibility.

It is important to note that only 35% of homes in the United States had access to electrical power in 1920, primarily in urban areas. Throughout most of the decade, for this reason, radios and other electrical appliances were designed to be powered by batteries. As the decade progressed, availability of electric power spread, and as a result, appliances were altered or developed to take advantage of it. By 1927 radios could be "plugged-in" to home electrical lighting circuits, movies gained soundtracks, and portable film projectors with audio amplifiers for soundtracks were marketed for use in schools, posing a threat, some worried, to teacher's jobs.

Illustration depicting use of applied electronics, *Electrical Experimenter* magazine, December 1919

STROMBERG ELECTRO INSTRUMENTS

Electrically Amplified Guitars, Tenor Guitars, Banjos and Mandolins

The tone in these instruments is amplified many times, through a magnetic pickup built into the instrument which takes the vibrations direct from the sounding board, and passes it through a two-stage amplifier. Every tone is brought out distinctly and evenly, with a volume that will fill even a large hall. This outfit makes possible the use of these instruments in places where their lack of volume has made their use hitherto impossible. Two or three instruments may be used simultaneously if desired.

Operated from light socket, alternating current. No batteries required.

Price of Amplifier only, no instruments included.....$145.00
Electro Guitar, Spanish or Hawaiian Style, fitted with Stromberg pickup.....
Tenor Guitar, fitted with Stromberg pickup.....
Mandolin, fitted with Stromberg pickup.....
Tenor Banjo, fitted with Stromberg pickup.....

(NOTE: If only direct current is available, your local electrical dealer can supply a converter for changing direct current to alternating.)

Stromberg Electro advertisement from *Music Trades* magazine, 1928

Late in the year 1928, Chicago's Stromberg-Voisinet Co. announced the "Stromberg Electro Instruments." These were designed to amplify volume using an electro-magnetic "pick-up" focused on the vibration of the soundboard, connected by a cord to a "tone amplifier" (with reproducer – a component now known as a "speaker"). The signal created would have been very weak in contrast to what was soon to come. These instruments apparently did not go into production and none are known to exist today. Except for a publicized radio performance the same year, nothing more came of the Stromberg Electro, however it marks a point at which the idea of amplifying instruments became an actualized goal. If the goal could be more successfully achieved, individual musicians and small ensembles could reach much larger audiences, reaping greater profits. Also with amplification, large orchestras could accommodate instruments that had been excluded due to their inherently low acoustic volume – such as the guitar. This time also marks the point at which small, "plug-in-the-wall" amplifier/speaker systems had become available for use primarily as portable public address systems. It is a period when everyone has the same idea: to amplify their musical instruments. It was also a crossroad where the experimenters had to break with the hope of relying on an instrument's acoustic properties and with the use of microphone technology, in order to find a new path to increasing volume.

Amplification of stringed instruments became the focus for many, with violins and guitars attracting the most attention. For the guitar, it is important to recognize that this is a time when Hawaiian-style guitarists out-numbered traditional Spanish-style guitarists; 1930 marks a high-point in the world-wide enthusiasm for Hawaiian music. Consequentially, manufacturers focused on the production of Hawaiian (lap) guitars rather than traditional Spanish models.

Spanish Style playing position

Hawaiian Style playing position

The electric guitar's origin story has long been confused by myth and legend. Frivolous claims by musicians and competitive claims by manufactures have fueled controversies. The lack of scholarship given the topic has led to abundant misinformation. Perhaps the most prevalent electric guitar myth began with a corporate history of the Gibson Guitar Company written by employee Julius Bellson in 1973. In it, Bellson states that Gibson introduced the electric guitar in 1924 through the work of acoustic engineer Lloyd Loar. No evidence exists to support Bellson's statement; in fact, it wasn't until 1934 that the company introduced their first electrical amplification product; an add-on pick-up for existing acoustic guitars. It was followed a year later by the introduction of Gibson's first electric guitars, a Hawaiian (lap-steel: E-150) followed by a Spanish (standard, ES-150) guitar. This myth was perpetuated in 2010 with the discovery of a 1923 Gibson harp guitar brought forward as evidence of the company's early experiments, only to be debunked later as it was revealed to have been retrofitted with an electric pick-up from a 3rd generation ViviTone electric guitar manufactured in 1934.

ViviTone was the manufacturing company established by Lloyd Loar in 1932, years after he left his position at Gibson. The company's focus was to develop a range of electrically amplified instruments, ignoring the extremely popular Hawaiian "steel guitar" in favor of lutes and mandolins. Loar's lack of success was due to his electronic pick-up design, which was akin to the unsuccessful Stromberg-Voisinet Electro design. Loar's problems were further compounded by his preoccupation with acoustic concerns and classical approach to lutherie. He eventually turned his attention to amplifying keyboard instruments.

1932 is the year that marks the successful and formal debut of the instrument we know as the “electric guitar.” The debut of what became, and remains today, the world’s most popular instrument can be attributed directly to two individuals: George Beauchamp of Los Angeles, California and Gage Brewer of Wichita, Kansas – George being the inventor, Gage the performer. We do not know when the two men first met. It might have been on the vaudeville circuit in the Midwest during the teens or 1920s or it may have been later in in Los Angeles, California as their careers in music advanced.

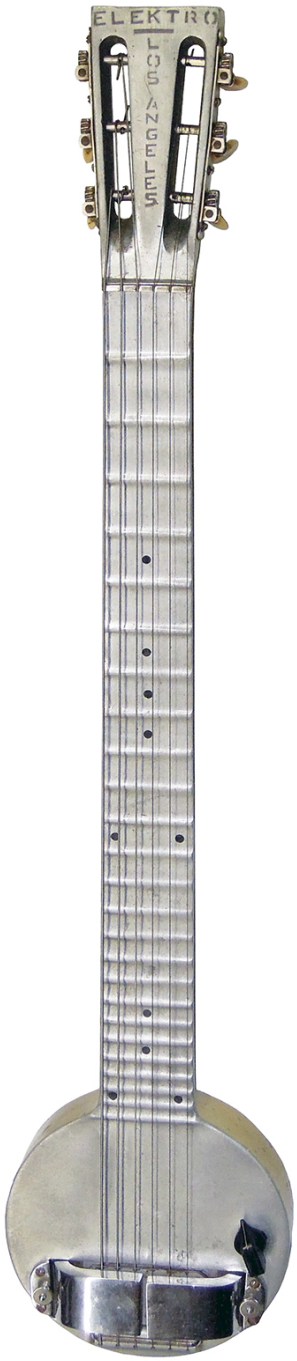
Beauchamp's Hawaiian Trio,
George Beauchamp left, circa 1925

Brewer's Hawaiian Trio,
Gage Brewer center, circa 1925

George Beauchamp, a Texan, was a talented performer playing the in Hawaiian style and drawn to Los Angeles to further his career as a performing musician. There, he approached John Dopera, who with others in his family operated a business making and repairing stringed instruments. Together the two talked of creating guitars with increased volume and in 1926 developed a guitar with acoustic resonators which they called the “Tricone – Silver Guitar.” This instrument launched their new company: the National Stringed Instrument Corporation.

National Tricone "Silver" Guitar, 1927 - collection of the Wichita-Sedgwick County Historical Museum

By 1931, Beauchamp left National and started a new company with the financial backing of Adolph Rickenbacher whose company was a supplier to National. Beauchamp's new concept was to completely abandon the acoustic nature of musical instruments in favor of electronic technology's ability to interpret and amplify sound. Beauchamp's design drew from technology related to speaker design and placed an electro magnet directly next to steel strings which produced a very strong signal to be "picked-up" and sent to the amplifier for volume that could compete with any section of an orchestra. Beauchamp's new company was named "Ro-Pat-In Corporation" which may have been as Richard Smith, seminal electric guitar historian suggests, an abbreviated version of: Rickenbacher Original Patent Instruments. Within two years the company would change its name to Rickenbacher Electro Instrument – it exists yet today as Rickenbacker International Corporation.



Ro-Pat-In electric Hawaiian Guitar, 1932

Ro-Pat-In prototype electric Spanish Guitar - the "Brewer Guitar," 1932

The summer of 1932 marked the launch of Beauchamp's futuristic, machine age products with an emphasis on the production of the Hawaiian model now known as the "Frying Pan" due to its shape and the fact that it is made of cast metal, making no pretense to resemble anything that had come before. Dr. Matthew Hill, Organologist and corporate historian for Rickenbacker, has suggested the "Frying Pan" may have been designed to be convertible to standard use due to its round neck and cast-in frets. At this same time Beauchamp produced a standard Spanish model. The full-sized standard Spanish guitar was less of a departure from convention. The prototype which would be acquired by Gage Brewer utilized a thick plywood top to support the heavy electro-magnetic pick-up with no acoustic qualities intended. The bodies for subsequent production models were out-sourced to the Harmony Musical Instrument Company of Chicago, then shipped to Los Angeles, serving only as a vehicle to hold the pick-up and electronics. Fewer than two-dozen guitar amplifier sets were produced that year, three quarters of them Hawaiian sets. Most of these were branded as "Electro" or "Elektro" and occasionally included words noting the city of the manufacturer; Los Angeles.

Gage Brewer became a central figure in the electric guitar's origin story by being first to take-up the revolutionary new instrument and featuring it unabashedly. Brewer, a contemporary of Beauchamp, was born 350 miles north of the Texan, in the town of Gage, Oklahoma Territory. As a youngster his family split their time between near-by Shattuck, Oklahoma and Mattoon, Illinois. Along the way, Brewer became enamored with Hawaiian Music, presumably through performances by traveling Hawaiian musicians working on the Vaudeville, Orpheum, and Chautauqua circuits throughout the Midwest.

Columbia test record with inscription by Sol Hoopii to Gage Brewer, circa 1930, collection of the Wichita-Sedgwick County Historical Museum

At a young age, Brewer enrolled in correspondence courses to learn to play the Hawaiian guitar and by the age of 14 was working in Shattuck's theater, hosting dances featuring his group and giving Hawaiian guitar lessons. He eventually enrolled in Alva Oklahoma's teachers college obtaining teaching credentials. Also during this time, Brewer developed relationships with Hawaiian guitarists of renown including Sol Hoopii. Brewer traveled to Los Angeles to build on these relationships, perform, and to develop his career as a guitar playing orchestra leader.

By 1924 Brewer moved to Wichita, Kansas, a prosperous, growing city of about 100,000 that would soon become known as the Air Capital of the World for its dynamic aviation industry. Here he pursued a career in music performance and teaching. He gained celebrity status quickly by leading Gage Brewer's Hawaiian Entertainers. As a music teacher, he supplemented his income by acting as a dealer for the National Resonator Guitar Company. His association with the company certainly kept him in contact with Beauchamp and led to a part in developing the electric guitar. He acquired two of them as soon as they were available. Corporate records show Brewer obtaining these instruments in September of 1932. He returned to Wichita to present the instruments to his loyal audience. A *Wichita Beacon* newspaper account from October 2, 1932 reads:

"Gage Brewer, well known radio entertainer, who returned recently from the west coast, brought with him a new and revolutionary musical instrument, the electro steel guitar, which he is introducing at Shadowland Dance Hall at the city limits on South Lawrence Avenue – Highway. The new instrument involves a new principal in harmony and will undoubtedly open up a new field in musical instruments. The electro steel guitar has the same characteristics as the steel guitar, but with the same quality, fullness and harmony of a pipe organ.
Mr. Brewer said it was the most wonderful instrument he had ever played. He is the third musician in the world to use one of these new instruments. The instrument is not in production yet but the inventor, George Beauchamp, has experimented several years with various models, bringing it up to a standard far surpassing the now old fashioned steel guitar. One of the most remarkable things of the instrument is the tone quality of the bass, which might be compared with the bass of an orthophonic speaker.
(Photo Caption) Gage Brewer, well known radio artist, is shown here with the Electro Steel Guitar, at top, as contrasted with the now out-moded steel guitar. Music from the new Electro Guitar is reproduced thru the loud speaker."

OCTOBER TERM OF COURT FINDS 1,814 CASES ON DOCKET

20 PER CENT ARE DIVORCES

PERSONNEL OF NEW CLOTHING STORE

DR. FISHBEIN DODGES SUIT

NOTED EDITOR AND WIFE

R. I. TO OFFER BIRTHDAY RATE

WALK CONTEST DRAWS THRONG

TROOPS READY FOR MINE WAR

Brinkley Talks About Fishbein

TAMMANY NIPS M'KEE SLASH

SALVATION ARMY FUND DRIVE SWINGS INTO HOME STRETCH

PLACES MUSIC VALUE AT $7,500

THE LATEST IN GUITARS

NEW GUITAR BROUGHT HERE

HURT BROTHERS BUSINESS GROWS

PIONEER COAL MERCHANTS

$235 STOLEN FROM HOME

HIJACKER HAD THE BEST HAND

Wichita Beacon, October 2, 1932


THE LATEST IN GUITARS

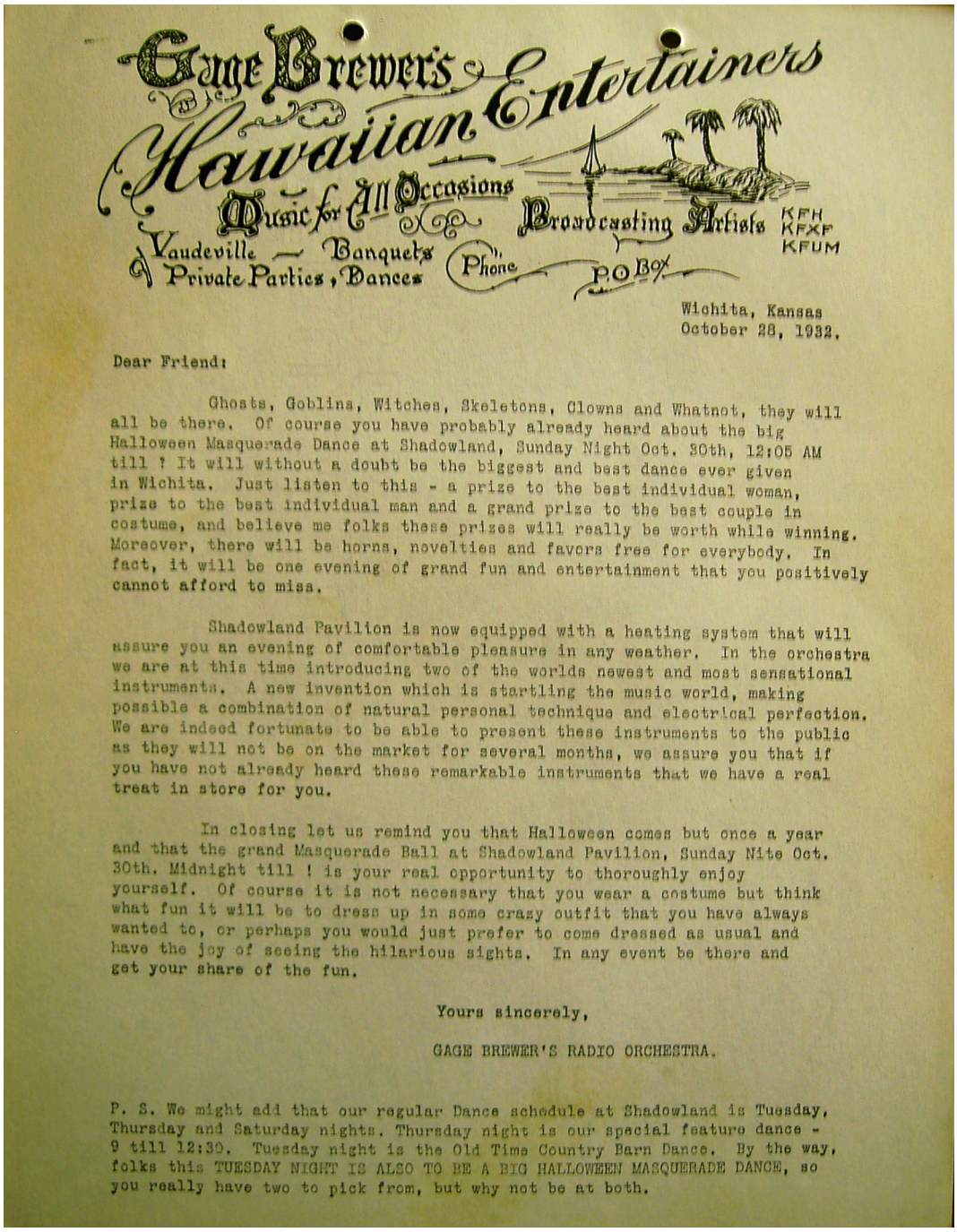
Gage Brewer, well known radio artist, is shown here with the Electro Steel Guitar, at top, as contrasted with the now out-moded steel guitar. Music from the new Electro Guitar is reproduced thru the loud speaker.

October 2, 1932 *Wichita Beacon* photo and caption

While Brewer is recognized as the first to publically launch the electric guitar, it is notable that he lists himself as the third person to play it. No documentation has yet been found which reveals with certainty who the first two were, but we can surmise that it may have been “field-tested” by Beauchamp himself and possibly his friend, guitarist Jack Miller who performed with the Orville Knapp Orchestra. In a 1936 ***Downbeat*** magazine article, Miller claims to have been the first to play the instrument though no earlier reference to the event is known and it was not publicized at the time.

Brewer however, deliberately generated press coverage directed at unveiling the electric guitar and proceeded to feature it in a series of Halloween Concerts. In an open public letter (dated October 28, 1932) advertising these performances Brewer states:

"...In the orchestra we are introducing two of the world’s newest and most sensational instruments. A new invention which is startling the music world, making possible a combination of natural technique and electrical perfection. We are indeed fortunate to be able to present these instruments to the public as they will not be on the market for several months, we assure you that if you have not already heard the remarkable instruments that we have a real treat in store for you..."



Gage Brewer's Entertainers

Hawaiian

Music for All Occasions

Broadcasting Artists KFH KFXF KFUM

Vaudeville — Banquets

Private Parties, Dances

Phone P.O. Box

Wichita, Kansas
October 28, 1932.

Dear Friend:

Ghosts, Goblins, Witches, Skeletons, Clowns and Whatnot, they will all be there. Of course you have probably already heard about the big Halloween Masquerade Dance at Shadowland, Sunday Night Oct. 30th, 12:05 AM till ? It will without a doubt be the biggest and best dance ever given in Wichita. Just listen to this - a prize to the best individual woman, prize to the best individual man and a grand prize to the best couple in costume, and believe me folks these prizes will really be worth while winning. Moreover, there will be horns, novelties and favors free for everybody. In fact, it will be one evening of grand fun and entertainment that you positively cannot afford to miss.

Shadowland Pavilion is now equipped with a heating system that will assure you an evening of comfortable pleasure in any weather. In the orchestra we are at this time introducing two of the worlds newest and most sensational instruments. A new invention which is startling the music world, making possible a combination of natural personal technique and electrical perfection. We are indeed fortunate to be able to present these instruments to the public as they will not be on the market for several months, we assure you that if you have not already heard these remarkable instruments that we have a real treat in store for you.

In closing let us remind you that Halloween comes but once a year and that the grand Masquerade Ball at Shadowland Pavilion, Sunday Nite Oct. 30th. Midnight till ! is your real opportunity to thoroughly enjoy yourself. Of course it is not necessary that you wear a costume but think what fun it will be to dress up in some crazy outfit that you have always wanted to, or perhaps you would just prefer to come dressed as usual and have the joy of seeing the hilarious sights. In any event be there and get your share of the fun.

Yours sincerely,

GAGE BREWER'S RADIO ORCHESTRA.

P. S. We might add that our regular Dance schedule at Shadowland is Tuesday, Thursday and Saturday nights. Thursday night is our special feature dance - 9 till 12:30. Tuesday night is the Old Time Country Barn Dance. By the way, folks this TUESDAY NIGHT IS ALSO TO BE A BIG HALLOWEEN MASQUERADE DANCE, so you really have two to pick from, but why not be at both.

Promotional Letter, 1932, Collection of the Wichita-Sedgwick County Historical Museum

Electro Headstock Logo

Brewer soon acquired other Electro branded instruments to outfit his orchestra, using them exclusively through 1933 and 1934, with the exception of his flashy custom engraved 1927 National Tricone Hawaiian Silver Guitar in which he replaced the resonators with a Rickenbacher pick-up. Only one other orchestra, performing in Atlantic City, New Jersey, has been documented as using the early Electros.

Electro Guitar, circa 1932, collection of the Wichita-Sedgwick County Historical Museum

Post Card: Steel Pier Hawaiians, circa 1933

Brewer Radio Orchestra with Electro guitars, Wichita, Kansas, circa 1933. Collection of the Wichita-Sedgwick County Historical Museum

Electro String Instruments soon attracted competition by Beauchamp's former partners now operating the National and Dobro companies, both working by 1933 to develop competing electric instruments. In 1934, Beauchamp was already developing a second generation of electric instruments just as other companies had begun to enter the market. Beauchamp's new line was cast of Bakelite plastic rather than aluminum and branded the "B" series. These included a variety of Hawaiian guitars as well as standard Spanish models. If the "Frying Pan" (at this point referred to as the "A" model), didn't qualify as a solid body standard guitar, the "B" model Spanish guitar certainly did and constitutes a landmark development.

Rickenbacker Model B electric Spanish Guitar, 1935

Rickenbacker’s B series Spanish guitar stands as the first solidbody. The concept was later adapted by Chicago’s Slingerland Company (1936), Les Paul's "Log" (1940), Paul Bigsby (1947), and Leo Fender (1950) who was the first to achieve commercial success.

Slingerland Electric Spanish Guitar, circa 1936

Les Paul's "Log" Electric Spanish Guitar, circa 1940

Paul Bigsby Electric Spanish "Merle Travis" Guitar, 1947

Fender Electric Spanish Guitar, 1950

By 1935, the company now known officially as Rickenbacher Electro String Instruments introduced their second generation with the "B" models as well as an expanded traditional line of wooden instruments whose manufacture was outsourced from companies in Chicago. It is important to note that their design was devoid of acoustic concerns as their pickup replaced this function entirely. These instruments included mandolins, violins, violas, and bass violins as well as a new Spanish guitar called the "Ken Roberts" in honor of an obscure guitar playing friend of Beauchamp's, suddenly necessary in lieu of guitar celebrity Alvino Rey's withdrawn endorsement. Rey abandoned his affiliation with Rickenbacher to develop electric guitars for the Gibson Company who had finally decided to enter the electric guitar market. It is notable that many of these second generation Rickenbachers featured the "Kauffman Vibrato" developed by Clayton "Doc" Kauffman, a company associate who ten years later would become legendary guitar manufacturer Leo Fender's founding partner.

Rickenbacker Stringed Instrument Company, never overly concerned with gaining a patent or taking legal action, was finally awarded its patent in 1937, years after submitting its application. By this time the company faced coast to coast competition from many manufactures. It didn't rankle the company's principal investor, Adolph Rickenbacher, who remarked "as soon as everyone began making them, everyone began buying them."

By then Beauchamp's involvement with the company began to wane. He died of a heart attack in 1941 at the age of 42. This was the same year of the United States' entry into World War II, an event which brought an abrupt end to the instrument's initial ascent and stalled its development for nearly a decade.

Adolph Rickenbacker, circa 1970, photograph by John Hall, Rickenbacker International

Recommended Reading

“The History of Rickenbacker Guitars” Richard R. Smith, Centerstream Publishing, 1987

“The History and Artistry of National Resonator Instruments” Bob Brozman, Centerstream Publishing, 1993

“Gibson Guitars – 100 Years of an American Icon” Walter Carter, General Publishing Group 1994

Website: Matthew Hill (Organologist) www.organology.org

"George Beauchamp and the rise of the electric guitar up to 1939" http://hdl.handle.net/1842/9489

Website: 120 Years of Electronic Music www.120years.net

Articles by Lynn Wheelwright:

https://www.vintageguitar.com/3588/ro-pat-in-electric-spanish/

http://www.prewargibsonl-5.com/alvino-rey/4583453349

https://www.vintageguitar.com/1924/gibson-rd-electric-guitar/

Social Media: FaceBook Group “Pre War Electric Guitars”

Wichita-Sedgwick County Historical Museum’s YouTube channel: wichitahistory
- see videos from the 2016 Electric Guitar Symposium

The Wichita- Sedgwick County Historical Museum

204 S. Main
Wichita, KS 67202

www.wichitahistory.org

Mission: The Wichita-Sedgwick County Historical Museum's mission is to educate the community and its visitors about local history by collecting, preserving, and interpreting materials reflecting the heritage of Wichita and Sedgwick County.

The Museum was chartered in 1939 and since 1980 has occupied Wichita's original City Hall building. It is open to the public and features many exhibits which are encyclopedic in scope and focused on the area's local history beginning with post-Civil War settlement. The Museum is open and accessible six days weekly. The Museum has maintained accreditation by the American Alliance of Museums since 1972 and is operated as a 501(c)(3) not-for-profit organization. The museum is supported, in part, privately through its operation and membership and publicly through the support of the City of Wichita and the Board of Sedgwick County Commissioners.